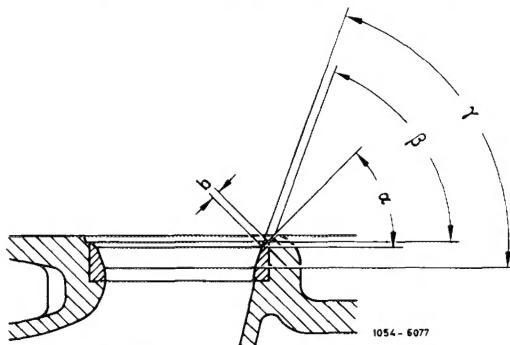


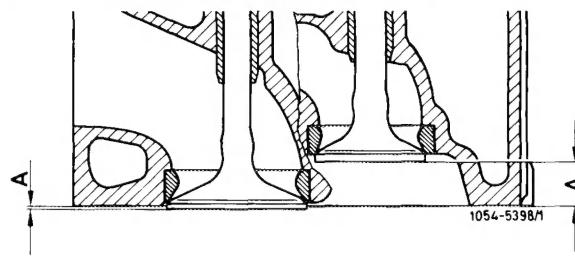
## 05-291 Machining valve seats

| Data                             | Intake  | Exhaust |
|----------------------------------|---------|---------|
| Valve seat width b               | 1.8–3.0 | 1.5–2.5 |
| Valve seat angle $\alpha$        |         | 45°     |
| Correction angle top $\beta$     |         | 70°     |
| Correction angle bottom $\gamma$ |         | 70°     |
| Perm. runout of valve seat       | 0.05    |         |



### Valve distance in relation to cylinder head parting surface

|   |                   |             |             |
|---|-------------------|-------------|-------------|
| Engines   |                   | 115.923/926 | 115.951     |
|   |                   | 115.938/939 | 115.954     |
| Min. distance A with new valve seats and new valves             | intake<br>exhaust | –0.2<br>–16 | +0.1<br>–16 |
| Max. distance A with refinished valve seats and reground valves | intake<br>exhaust | –1.5<br>–17 | –0.9<br>–17 |



### Special tools

|   |            |                  |
|---|------------|------------------|
| Magnetic lift for valve cone halves           | 11004-6202 | 116 589 06 63 00 |
| Pressure lever for valve spring               | 1004-7664  | 123 589 03 61 00 |
| Plug gauge 9 mm dia. for intake valve guide   | 11004-6211 | 117 589 03 23 00 |
| Plug gauge 11 mm dia. for exhaust valve guide |            | 117 589 04 23 00 |

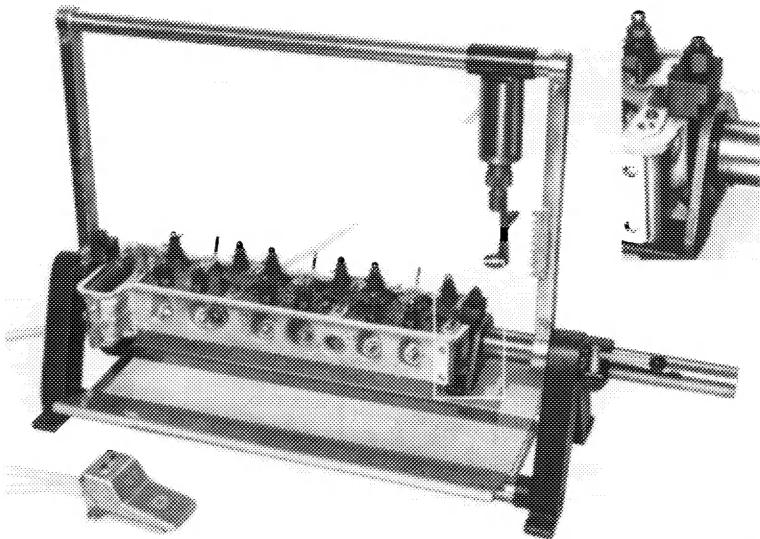
## Conventional tools

|                               |  |
|-------------------------------|--|
| Cylinder head clamping device | e.g. made by Rothenberger, D-6233 Kelkheim<br>order No. 2.9900                       |
| Valve seat machining tool     | e.g. made by Hunger, D-8000 München 70<br>type VDNSL 1/45/30<br>order No. 236.03.308 |
| Test set for valve seats      | e.g. made by Hunger, D-8000 München 70<br>order No. 216.93.300                       |

## Note

Clamp cylinder head for disassembly and machining into clamping device.

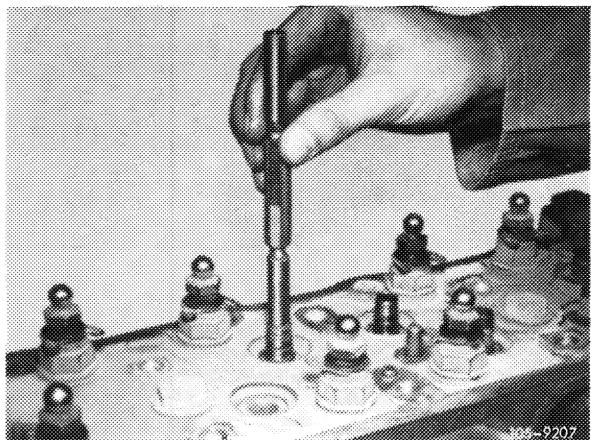
Refinish valve seats with valve seat machining tool, with valve seat grinder or with valve seat milling tool.



105-9470

## Machining valve seats

- 1 Check valve guides and renew, if required (05-285).



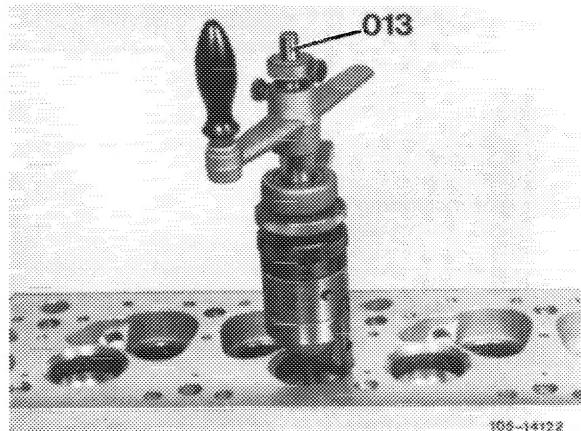
105-9207

2 Machine valve seat ( $45^\circ$ ) (refer to operating instructions of respective tool manufacturer).

**Attention!**

Loosen pilot (013) only after the runout of the valve seat has been checked.

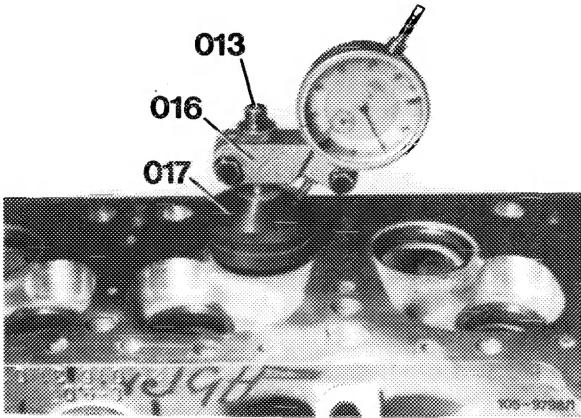
3 Measure valve seat width  $b$  and correct to  $70^\circ$  at top and bottom, if required.



006-14122

4 Check runout of valve seat.

For this purpose, slip check sleeve (017) with dial gauge holder (016) and dial gauge on pilot (013) and turn check sleeve. The permissible runout of 0.05 mm should not be exceeded.

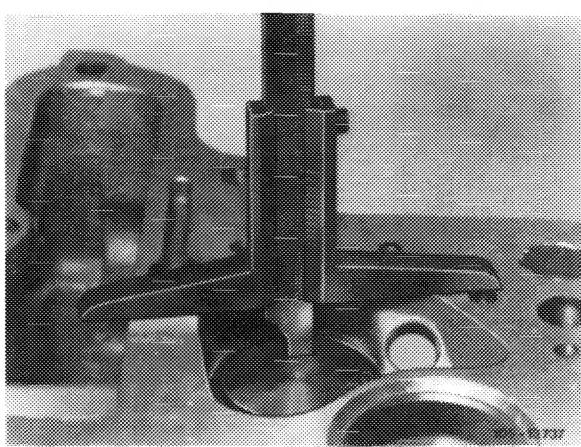


013 Pilot  
016 Dial gauge holder  
017 Check sleeve

006-177368

5 Introduce new valve and measure max. distance A.

If required, renew valve seat ring (05-290).



006-18737